

REMARKS

This communication is in response to the April 1, 2008 Office Action ("Office Action").

The Office Action rejected Claims 1-10, 13, 15-27, and 31-40 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,729,463 to Koenig et al. ("Koenig") in view of U.S. Patent No. 6,487,525 to Hall et al. ("Hall"), further in view of "Formalizing the Design, Evaluation, and Application of Interaction Techniques for Immersive Virtual Environments" ("Bowman"). Claims 11, 12, 14, 28-30, 41, and 42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Koenig, in view of Hall, further in view of Bowman, further in view of U.S. Patent No. 6,453,209 to Hill et al. ("Hill").

With this response, Claims 9, 25, 26, 31, 32, 39, and 40 are canceled.

For the reasons set forth below, applicants respectfully traverse the rejections and request reconsideration and allowance of the pending claims.

Claim 1

Claim 1, as amended, reads as follows:

1. A method for generating frame designs for manufacturing a vehicle, the method comprising:

obtaining a specification for a plurality of components to be mounted on a frame of a vehicle,

obtaining processing data corresponding to each of the plurality of components to be mounted on the frame of the vehicle, wherein the processing data for each of the plurality of components includes location information corresponding to a logical starting position for attempting to locate a component on the frame, a range of additional positions to locate the component, and three-dimensional data corresponding to a tessellated representation of the component;

for each component of the plurality of components:

selecting the logical starting position as the current position for the selected component; and

repeatedly:

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determining whether the selected component at the current position coincides with a hole in the frame through which the selected component may be attached to the frame, and whether the tessellated representation of the selected component located at a current position interferes with the tessellated representation of any other component previously configured to the frame; and

selecting a next position in the range of additional positions if the selected component does not coincide with a hole through which the selected component may be attached to the frame, or if the tessellated representation of the selected component located at a current position interferes with the tessellated representation of any other component already configured to the frame;

until the current position coincides with a hole in the frame through which the selected component may be attached to the frame and the tessellated representation of the selected component located at a current position does not interfere with the tessellated representation of any other component already configured to the frame;

configuring the selected component to the frame at the position corresponding to a matching hole; and

generating a frame design corresponding to the configured positions for each of the plurality of components.

(Emphasis added)

Applicants respectfully submit that Koenig, Hall, and Bowman fail to disclose, either singularly or in combination, the elements recited above in Claim 1, particularly the step of repeatedly

determining whether the selected component at the current position coincides with a hole in the frame through which the selected component may be attached to the frame, and whether the tessellated representation of the selected component located at a current position interferes with the tessellated representation of any other component previously configured to the frame.

Applicants note that this element has been incorporated into Claim 1 from previous Claim 9 and clarified for the purpose of advancing prosecution. Accordingly, reference will be made to the rejection with regard to Claim 9.

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With regard to "a hole in the frame through which the selected component may be attached to the frame," as recited in Claim 1, the Office Action cites to Hall, Figure 2, and Col. 5, lines 5-19, erroneously interpreting an "inlet opening" in an HVAC air handling system which allows the ingress of air, as the functional equivalent of "existing holes on the frame for attaching a component." Clearly, however, an HVAC component with an inlet opening that permits the passage of air through the component cannot be reasonably be construed to be the functional equivalent of "a hole in the frame through which the selected component may be attached to the frame." Assuming the assertion that the inlet opening is the functional equivalent of "a hole in the frame through which the selected component may be attached to the frame," the rationale of the assertion breaks down as (a) the HVAC component is not a frame of a vehicle, and (b) the inlet is not a hole *through* which a component is attached.

As set forth by the Supreme Court, and explicitly recited in the M.P.E.P., the key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reasons why the claimed invention would have been obvious. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 U.S.P.Q.2d 1385, 1395-97 (2007). Moreover, the Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. § 103 should be made explicit.

The Office Action has apparently relied upon one of the rationales suggested in *KSR* for rejecting Claim 1, particularly "combining prior art elements according to known methods to yield predictable results." However, as recited in the M.P.E.P. § 2143(A), "if any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art." (Emphasis added.)

The Office Action suggests that Koenig, Hall, and Bowman disclose all elements of Claim 1. However, as amended, the cited references, alone and in combination, fail to disclose each element of Claim 1. Thus, a finding of all elements of Claim 1 cannot be made, and the

rationale for rejecting Claim 1 cannot be supported. Applicants, therefore, submit that a proper *prima facie* case of obviousness in view of Koenig, Hall, and Bowman cannot be made, and request that the 35 U.S.C. § 103(a) rejection of Claim 1 be withdrawn and the claim allowed.

Claims 2-8 and 10-16

Claims 2-8 and 10-16 each depend from independent Claim 1. As Claim 1 is in condition for allowance over Koenig, Hall, and Bowman, applicants submit that Claims 2-10 and 10-16 are also in condition for allowance. Accordingly, applicants request that the 35 U.S.C. § 103(a) rejections be withdrawn and the claims allowed.

Claim 17

As amended, independent Claim 17 reads as follows:

17. A computer system suitable and configured for generating frame designs for manufacturing a vehicle, the computer system comprising:

a processor that executes computer-executable instructions; and

a memory, the memory storing data and computer-executable modules comprising computer-executable instructions;

wherein, upon execution of one or more computer-executable module, the computer system is configured to:

obtain a specification for a plurality of components to be mounted on a frame of a vehicle,

obtain processing data corresponding to each of the plurality of components to be mounted on the frame of the vehicle, wherein the processing data for each of the plurality of components includes location information corresponding to a logical starting position for attempting to locate a component on the frame, a range of additional dimensional positions to locate the component, and three-dimensional data corresponding to a tessellated representation of the component;

for each component of the plurality of components:

select the logical starting position as the current position for the selected component; and

repeatedly:

determine whether the selected component at the current position coincides with a hole in the frame through which the selected component may be attached to the frame, and further determine whether the tessellated representation of the selected component located at a current position interferes with the tessellated representation of any other component already configured to the frame; and

select a next position in the range of additional positions if the selected component fails to coincide with a hole through which the selected component may be attached to the frame, or if the tessellated representation of the selected component located at a current position interferes with the tessellated representation of any other component already configured to the frame;

until the current position coincides with a hole in the frame through which the selected component may be attached to the frame and the tessellated representation of the selected component located at a current position does not interfere with the tessellated representation of any other component already configured to the frame;

configure the selected component to the frame at the current position corresponding to a matching hole; and

generate a frame design corresponding to the configured positions for each of the plurality of components.

As can be seen, Claim 17 has been amended to recite similar elements to those found in Claim 1, particularly regarding "determin[ing] whether the selected component at the current position coincides with a hole in the frame through which the selected component may be attached to the frame."

As set forth above, Koenig, Hall, and Bowman, alone and in combination, fail to disclose each element of independent Claim 17. As the cited references fail to disclose the elements of Claim 17, a proper *prima facie* case of obviousness cannot be made. Accordingly applicants request that the 35 U.S.C. § 103(a) rejection be withdrawn and the claim allowed.

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Claims 18-24 and 27-32

Claims 18-24 and 27-32 each depend from independent Claim 17. As Claim 17 is in condition for allowance, applicants submit that Claims 18-24 and 27-32 are also in condition for allowance over the cited references. Applicants respectfully request that the 35 U.S.C. § 103(a) rejections of these claims be withdrawn and the claims allowed.

Claim 33

As amended, independent Claim 33 reads as follows:

33. A computer-readable medium having computer-executable modules for generating frame designs for manufacturing a vehicle, the computer-executable modules comprising:

- an interface module for obtaining a specification of a plurality of components to be mounted on a frame of a vehicle and for transmitting a frame design corresponding to a configuration of the components mounted on the frame of the vehicle;

- a processing data module for storing processing data corresponding to each of the plurality of components to be mounted on the frame of the vehicle, wherein the processing data includes location information corresponding to a logical starting position for attempting to locate a component on the frame and a range of additional positions to locate the component and three-dimensional data corresponding to a tessellated representation of the component; and

- a configuration module for obtaining the processing data corresponding to each of the plurality of components to be mounted on the frame and, after obtaining the processing data and for each of the plurality of components:

- select the logical starting position of the current component as a current position for the current component;

- repeatedly:

- perform an interference check to determine whether the current component at the current position coincides with a hole in the frame through which the current component may be attached to the frame, and further determine whether the tessellated representation of the current component located at a current position interferes with the tessellated

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representation of any other component already configured to the frame;
and

select a next position in the range of additional positions if the current component fails to coincide with a hole through which the current component may be attached to the frame, or if the tessellated representation of the current component located at a current position interferes with the tessellated representation of any other component already configured to the frame;

until the current position coincides with a hole in the frame through which the current component may be attached to the frame and the tessellated representation of the current component located at a current position does not interfere with the tessellated representation of any other component already configured to the frame; and

configure the current component to the frame at the current position corresponding to a matching hole;

wherein upon execution of the executable modules on a computing device, configure the computing device to generate a frame design of a vehicle according to the configured positions of each of the plurality of components.

As discussed above, applicants respectfully submit that Koenig, Hall, and Bowman, alone and in combination, fail to disclose a configuration module configured as described above, particularly one that, for each component to be configured to the vehicle frame, selects a starting position as the current position and repeatedly determines if the current position coincides with a hole in the frame through which the component may be attached to the frame and that does not interfere with other components already configured to the frame. Accordingly, applicants request that the 35 U.S.C. § 103(a) rejection of Claim 33 in view of the combination of Koenig, Hall, and Bowman be withdrawn and the claim allowed.

Claims 34-38 and 41-42

Claims 34-38 and 41-42 each depend from independent Claim 33. As Claim 33 is in condition for allowance, applicants submit that Claims 34-38 and 41-42 are also in condition for

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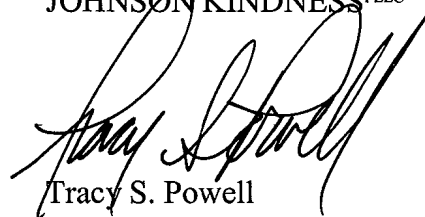
allowance over the cited references. Applicants respectfully request that the 35 U.S.C. § 103(a) rejections of these claims be withdrawn and the claims allowed.

CONCLUSION

In view of the amendments and the foregoing remarks, applicants submit that the pending claims are in condition of allowance over the cited references: Koenig, Hall, Bowman, and Hill. If the Examiner has any questions regarding these matters, the Examiner is invited to contact applicants' representative at the number below.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Tracy S. Powell", is written over the printed name and firm name.

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